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south. In the list there are included descriptions of 76 new species and varieties.—J. M. C.

**Flora of Shikotan.**—TAKEDA<sup>48</sup> has studied somewhat intensively the flora of Shikotan, which is a small island situated near enough to the Kurile Islands to be regarded as one of them, at least in climatic conditions. The great interest of the islands in general is that the vegetation is quite primeval, nothing having been disturbed by the hand of man; in fact, Shikotan seems not to have been touched by human hands at all. An analysis of the floristic features is presented, and the enumeration includes 234 species, the largest assemblage being dicotyledons (219). The four largest families appear in the following order of abundance: Compositae, Gramineae, Rosaceae, and Umbelliferae. The largest genus is *Carex*, with 15 species; and 28 families are represented by a single genus, 23 of these genera being represented by a single species. The list includes the description of 5 new species.—J. M. C.

**Phytogeographic notes from Palestine.**—AARONSOHN<sup>49</sup> has called attention to some species that are disappearing from the flora of Palestine. He describes a little known station of *Acacia albida*, a species of northern Africa heretofore regarded as merely cultivated in Palestine. AARONSOHN regards it as an indigenous relict. Among other rare relicts in Palestine are *Pinus halepensis*, *Juniperus phoenicea*, and *Fraxinus oxycarpa oligophylla*. The author believes that these species, on account of the great need for wood in the arid Palestine climate, have been essentially exterminated by man. An interesting argument in support of this view, recalling the methods employed by the English ecologists in working out the original distribution of the beech, is based on the occurrence of place-names derived from these trees in neighborhoods where these species are no longer to be found.—H. C. COWLES.

**U.S. Forest Service.**—Among various articles of more or less general interest in a recent periodical, JAENICKE<sup>50</sup> gives a brief and interesting résumé of the varied activities of the Forest Service. This organization, employing the services of 2,895 persons, many of them with botanical training, and expending annually some \$6,000,000, devotes its attention to subjects ranging from purely botanical research through reforestation and forest protection to the sale of timber and the development of water power. With increasing interest in forest protection, there is coming an increasing demand for increasing

<sup>48</sup> TAKEDA, H., The flora of the island of Shikotan. *Jour. Linn. Soc. Bot.* **42**: 433-510. 1914.

<sup>49</sup> AARONSOHN, A., Notules de phytogéographie palestinienne. (I). Une station peu connue de l'*Acacia albida* Del. (II). Espèces en voie d'extinction. *Bull. Soc. Bot. France* **60**:495-503, 585-592. *pl. 1.* 1913.

<sup>50</sup> JAENICKE, A. J., Progress of the U.S. Forest Service as reflected in the forester's reports of 1911, 1912, 1913. *Forestry Quarterly* **12**:397-407. 1914.

efficiency and more scientific knowledge of the principles underlying the various phases of forest administration, and these demands are being met as far as the limited funds permit.—GEO. D. FULLER.

**Parasitic fungi of Wisconsin.**—DAVIS<sup>51</sup> has brought together in a single list the parasitic fungi of Wisconsin reported in a succession of previous lists, beginning with that of A. F. BUNDY, published in the Report of the Geological Survey issued in 1873-1879, and including 30 species. The next list was that of TRELEASE (1884), and since then DAVIS has been indefatigable in adding species which justified the publication at intervals of supplementary lists. The final list contains 825 species of parasitic fungi and about 750 hosts. The Phycomycetes are represented by 61 species, 24 of which belong to *Peronospora*. The Ascomycetes number 502 species, the largest genus being *Septoria*, with 121 species. The Basidiomycetes number 256 species, all but 6 of which are smuts and rusts.—J. M. C.

**Sand dune plants.**—In a study of the flora of some sand dunes near the sea between Redonda and Venice, California, COUCH<sup>52</sup> has made a floristic census of a number of quadrats, showing that in this area *Gaertneria bipinnatifida* is the dominant pioneer plant, but as the succession advances with increasing stability of the substratum, it is succeeded by *Abromia umbellata*, which is closely followed by *Eriogonum parvifolium*, *Adenostoma fasciculatum*, *Cheiranthus suffrutescens*, and *Lupinus Chamissonis*. Attention is also directed to the two kinds of competition here evident, that between the plants and their environment, and that between the plants themselves.—GEO. D. FULLER.

**Antagonistic symbiosis in lichens.**—TREBOUX<sup>53</sup> studies of *Cystococcus humicola*, an alga that occurs free in nature and also in symbiosis with lichen fungi, lead him to the view that the lichen fungus is essentially parasitic. He concludes that the physiology of this alga is the same, whether inside or outside of a fungal symbiont; it does not require protein food (peptone) in either case, but can secure its nitrogen from nitrates or ammonium salts. Among the points in favor of the theory of parasitism are the smaller size of the symbiotic algae as compared with the free algae, less frequent cell division, diseased aspect where in contact with haustoria, and the relative absence of pyrenoid starch.—H. C. COWLES.

<sup>51</sup> DAVIS, J. J., A provisional list of the parasitic fungi of Wisconsin. *Trans. Wis. Acad. Sci.* 17:846-984. 1914.

<sup>52</sup> COUCH, E. B., Notes on the ecology of sand dune plants. *Plant World* 17:204-209. 1914.

<sup>53</sup> TREBOUX, O., Die freilebende Alge und die Gonidie *Cystococcus humicola* in Bezug auf die Flechten-symbiose. *Ber. Deutsch. Bot. Gesells.* 30:69-80. 1912.